

Recent advances in utilization of oil palm by-products as animal feed

ABSTRACT

Rapid expansion of oil palm plantation and production in countries such as Malaysia, Indonesia, Thailand and Nigeria results in large quantities of biomass by-products. These by-products are mostly fibrous in nature although palm kernel meal can be considered a co-product that is valuable as animal feed. With the increase in feed prices and increased use of corn for ethanol production it is imperative that animal feed has to rely on feed materials not utilized by humans. This paper describes the various types of by-product that are potentially available for animal feed. While most of the fibrous by-products need to be processed before it can be fed to animals, palm kernel cake (PKC) can directly be used as a feed ingredient in ruminant feed. As a major producer of palm oil, Malaysia also produces more than 3.0 million tonnes of PKC, much of which is exported. However, its use in poultry is limited due to its high fibre content. In poultry, inclusion rates of 10-20% in the diets are common although higher rates can be achieved when PKC are fermented. Other by-products such as decanter cake, palm oil mill effluent, have been used in the feeding of beef cattle. The old fronds of oil palm removed during the harvesting of fruits have been fed to beef cattle after going through chopping or pelleting. In general, the feeding value of these by-products, with the exception of PKC, is low and to achieve a balanced ration they need to be supplemented with other feed ingredients. Improving the nutritive value of these by-products through fungal and bacterial fermentation has shown some improvements in the nutritive value but the quantum is still small when compared to the costs of the processing. Quite a number of studies have been conducted to increase the utilization of PKC in poultry diets to partially replace corn as an energy source. Solid state fermentation, enzyme treatment and probiotic supplementation have shown positive results.

Keyword: Palm oil by-products; Palm kernel cake; Palm biomass; Oil palm fronds; Nutritive value; Decanter cake